



Yfh1 (yH-17): sc-26154

BACKGROUND

Yfh1 is the yeast homolog of the mammalian protein frataxin, and is a member of the frataxin family. Yfh1 regulates mitochondrial iron efflux and localizes to the mitochondria of the cell where mitochondrial processing peptidase (MPP) cleaves the precursor to an intermediate form then converts it to the mature size protein. Yfh1 depletion in *S. cerevisiae* results in a reduction of mitochondrial iron/sulfur protein assembly both *in vivo* and *in vitro* and low levels of cytochrome, conditions which lead to a respiratory deficiency. Maturation of cytosolic iron/sulfur proteins and prevention of the accumulation of mitochondrial iron requires Yfh1. Patients with Friedrich's ataxia, the most common autosomal recessive ataxia, have defects in iron/sulfur protein maturation due to depleted levels of the frataxin protein. Overexpression of Yfh1 has no effect on oxygen consumption in wild-type yeast grown in both fermentative and respiratory carbon sources, suggesting that the effect of Yfh1 on mitochondrial iron metabolism is independent of respiratory activity.

REFERENCES

1. Chen, O.S. and Kaplan, J. 2001. Yfh1-mediated iron homeostasis is independent of mitochondrial respiration. *FEBS Lett.* 509: 131-134.
2. Muhlenhoff, U., Richhardt, N., Ristow, M., Kispal, G. and Lill, R. 2002. The yeast frataxin homolog Yfh1p plays a specific role in the maturation of cellular Fe/S proteins. *Hum. Mol. Genet.* 11: 2025-2036.
3. Chen, O.S., Hemenway, S., Kaplan, J. 2002. Genetic analysis of iron citrate toxicity in yeast: implications for mammalian iron homeostasis. *Proc. Natl. Acad. Sci. USA* 99: 16922-16927.
4. Lesuisse, E., Santos, R., Matzanke, B.F., Knight, S.A., Camadro, J.M. and Dancis, A. 2003. Iron use for haeme synthesis is under control of the yeast frataxin homologue (Yfh1). *Hum. Mol. Genet.* 12: 879-889.
5. SWISS-PROT/TrEMBL (Q07540). World Wide Web URL: www.ncbi.nlm.nih.gov:80/entrez

SOURCE

Yfh1 (yH-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Yfh1 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26154 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Yfh1 (yH-17) is recommended for detection of Yfh1 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.